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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,022	07/21/2003	Hector L. Casal	BP949302	5093

7590 03/29/2005

EXAMINER	
SINES, BRIAN J	

BP America Inc.
Docket Clerk, BP Legal, M.C. 5East
4101 Winfield Road
Warrenville, IL 60555

ART UNIT	PAPER NUMBER
1743	

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/624,022	CASAL ET AL.	
	Examiner	Art Unit	
	Brian J. Sines	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 10 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramachandran et al. (U.S. Pat. No. 4,868,330) in view of Farone (U.S. Pat. No. 5,262,961 A), Khouri et al. (U.S. Pat. No. 5,393,833 A) and Chang (U.S. Pat. No. 5,519,218 A). Regarding claims 10 – 17, Ramachandran et al. teach the use of an ammoxidation reactor in a chemical process (see figure 3). Ramachandran et al. teach that acrylonitrile is synthesized (see col. 12, lines 25 – 34). Ramanchandran et al. do teach the use of conventional equipment to monitor and automatically regulate the system so that it can be fully automated to run continuously in an efficient manner (see col. 12, lines 36 – 51). Ramachandran et al. do not specifically incorporate the use of a Fourier Transform infrared spectrometer for process control.

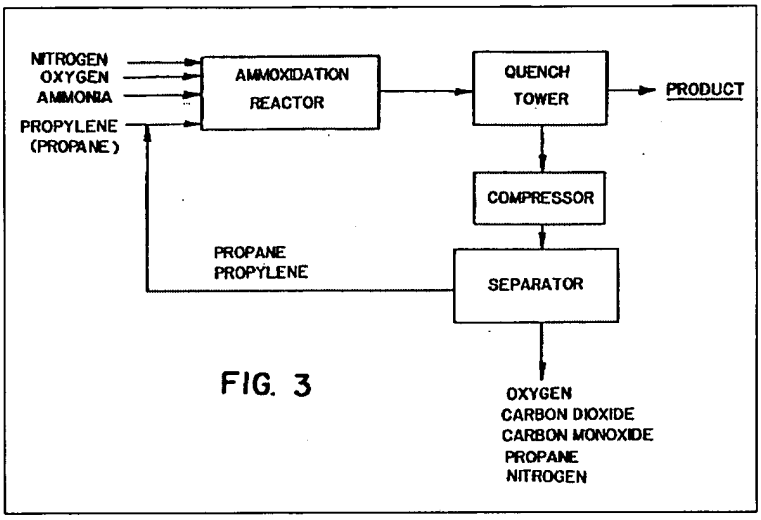

FIG. 3

Farone teaches the use of a Fourier Transform infrared spectrometer for monitoring and controlling and including optimizing the operation of a chemical process system (see col. 6, lines 10 – 67; figure 1). Farone teaches an apparatus comprising: a microprocessor (14); a Fourier transform infrared spectrometer (10) (see col. 9, lines 10 – 67; figure 1). Farone teaches the use of a controller (22) in conjunction with the computer (14) (see col. 9, lines 39 – 61). As evidenced by Farone, the monitoring and control of chemical reactors utilizing FTIR are notoriously well known in the art (see MPEP § 2144.03). Furthermore, as evidenced by Khouri et al., for example, the monitoring of acrylonitrile products via FTIR analysis are well known in the art (see col. 6, lines 24 – 44). Chang additionally teaches the advantages of utilizing FTIR in sample analysis, which are generally well known in the art (see col. 1, lines 1 – 37). See *In re Sernaker*, 702 F.2d 989, 994 – 95, 217 USPQ 1, 5 – 6 (Fed. Cir. 1983) (see MPEP § 2144).

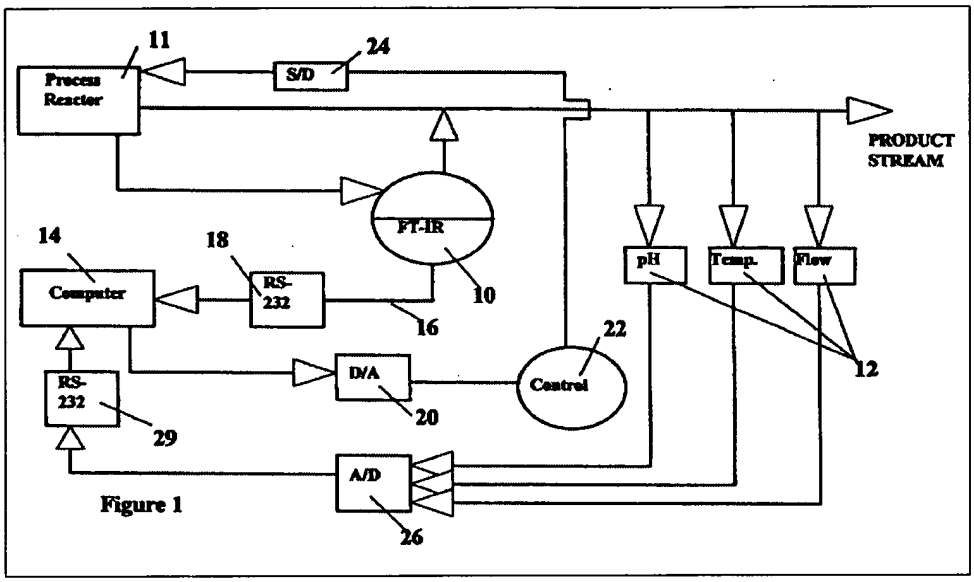

Figure 1

The Courts have held that "[a] reference is reasonably pertinent if, even though it may be in a different field of endeavor, it is one which, because of the subject matter with which it deals logically would have commended itself to an inventor's attention in considering his problem." (emphasis added). See *In re Clay*, 23 USPQ2d 1058 (CAFC 1992); & *In re GPAC, Inc.*, 35 USPQ2d 1116 (Fed. Cir. 1995). If a reference disclosure relates to the same problem as that addressed by the claimed invention, "that fact supports use of that reference in an obviousness rejection. An inventor may well have been motivated to consider the reference when making his invention." *Id.* (emphasis added). Hence, in view of the above discussion, a person of ordinary skill in the art would have recognized the suitability of incorporating the use of a Fourier Transform infrared spectrometer, as taught by Farone, for the intended purpose of monitoring and controlling a chemical process utilizing an ammoxidation reactor, such as the system disclosed by Ramachandran et al. (see MPEP § 2144.07). Furthermore, as evidenced by the aforementioned teachings, a person of ordinary skill in the art would accordingly have had a reasonable expectation of success of integrating the use of a Fourier Transform infrared

spectrometer for monitoring and controlling such a chemical process. The Courts have held that the prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. See *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986) (see MPEP § 2143.02). Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate the use of a Fourier Transform infrared spectrometer for process monitoring and control with the ammoxidation process of Ramachandran et al., in order to facilitate effective chemical process monitoring and control of the system. As discussed above, Farone teaches all of the structure of the control apparatus provided in the claimed method, which merely recites the conventional operation of that apparatus. In particular, Farone teaches that effluent samples are advanced through the transmission cell of the FT-IR instrument and scanned at a plurality of wavelengths continuously (see col. 9, lines 21 – 38). Farone further teaches the use of calibration data in determining sample concentrations for online monitoring of the chemical process (see col. 10, lines 5 – 15; col. 12, lines 14 – 29). Ramachandran et al. teach that the feed of ammonia is controlled during operation (see col. 12, lines 11 – 51).

Response to Arguments

Applicants canceled claims 1 – 9 and 18 – 23 in the preliminary amendment filed 7/21/2003. Claims 10 – 17 are pending.

Applicant's arguments with respect to claims 10 – 17 have been considered, but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines, Ph.D. whose telephone number is (571) 272-1263. The examiner can normally be reached on Monday - Friday (11:30 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).